REMARKS/ARGUMENTS

Claims 1-32 are pending in this application. By this Reply, claims 15, 20, and 24 are amended and claims 27-32 are withdrawn. Reconsideration and withdrawal of the rejections are respectfully requested in view the foregoing amendments and following remarks.

Applicant acknowledges with appreciation the indication of allowable subject matter in claims 8-10, 13, 16-19, 22, 23, 25, and 26.

Claims 1-5, 15, 20, 21, and 24 stand rejected under 35 U.S.C. § 102(e) over Posner et al. (U.S. patent No. 6,531,918) (hereinafter Posner). This rejection is respectfully traversed.

Posner fails to disclose all the claimed features, as required by Section 102. For example, Posner relates to a feed forward RF power amplifier to amplify an RF input signal. Referring to Figure 1, Posner discloses that an input signal on line 20 is provided to a main amplifier 14 and is further provided to a delay line 24. The output of the main power amplifier 14 is provided over line 18, and is sampled by a coupler 76. The sampled output signal is compared (differenced) by the combiner 30 to the output of the delay 24, to generate a distortion error signal on a line 80. The distortion error signal over line 80 is detected using a Schottky diode 86 to measure the energy in the signal, and is provided as a first input to the digital processor 16.

The digital signal processor 16 receives a second input from coupler 128. Specifically, an output of an error amplifier 102 is coupled (in this example added) back to a delayed output of the main amplifier 14, the delay being provided by a delay element 126. The coupler 128 provides feedback through a Schottky diode 124 to the controller 16.

Consequently, the microprocessor 16 receives two (2) inputs: a distortion error signal on a line 80 and feedback corresponding to a sum of an output of the error amplifier and an output of the main amplifier. The digital processor 16 outputs digital control signals over lines 92a, 92b, 94a (illustrated as 94c), and 94b (illustrated as 94d) to control the gain and phase circuit 60, 62 and 96, 98.

According to one aspect of a preferred embodiment of the present invention, on the other hand, and input signal is divided into three paths. The first path is provided over line 80 to the main amplification unit 202. The input signal is also divided by a second divider 201. Accordingly, the input signal is provided to the distortion component detecting unit 204 over line 82, and is further provided to the correlating unit 206 over line 83. The correlating unit 206 further receives an outputs of the distortion component detection unit 204. The correlating unit 206 thus output signals to control the distortion component detecting unit 204.

The Office Action asserts that the microprocessor 16 disclosed by Posner is equal to the claimed correlating unit. Moreover, the Office Action asserts that the microprocessor 16 is coupled to receive the digital input signal on a third path 80 and to receive the detected distortion components 124. As an initial matter, Applicant submits that the microprocessor 16 of Posner does not perform the claimed correlation function. However, assuming, without conceding, that the microprocessor 16 is the equivalent of the claimed correlating unit, the microprocessor still does not operate on the claimed inputs. For example, the microprocessor 16 receives a distortion error signal over line 80, and not the input signal. Additionally,

microprocessor 16 receives the output of the main amplifier coupled to the output of the error amplifier as a second input, and not the detected distortion component provided by the distortion component detecting unit.

Accordingly, Posner fails to disclose at least a main amplifying unit configured to amplify a digital input signal on a first path, a distortion component detecting unit coupled to receive the digital input signal on a second path and an output signal of the main amplifying unit and detect distortion components from the output signal of the main amplifying unit, and a correlating unit coupled to receive the digital input signal on a third path and the detected distortion components and configured to correlate the detected distortion components with the digital input signal to adaptively control the distortion component detecting unit, as recited in claim 1.

Moreover, Posner fails to disclose at least a main amplifying unit configured to amplify a digital input signal received on a first path, a distortion component detecting unit configured to process the digital input signal received on a second path with an output signal of the main amplifying unit, and to detect distortion components from the output signal of the main amplifying unit, a correlating unit configured to correlate the detected distortion components with the digital input signal received on a third path, to adaptively control the distortion component detecting unit, an error amplifying unit configured to amplify the detected distortion components, and a directional coupler configured to couple the output of the main amplifying unit with an output of the error amplifying unit to remove the distortion components included in the output signal of the main amplifying unit, as recited in claim 7.

Additionally, Posner fails to disclose at least amplifying a digital input signal received on a first path, processing the amplified digital input signal of the first path with the digital input signal received on a second path to detect a distortion component of the amplified digital input signal, and correlating the detected distortion components with the digital input signal received on a third path to adaptively control a gain of the digital input signal on the second path, as recited in claim 20.

Finally, Posner fails to disclose at least amplifying a digital input signal received on a first path to generate an amplified digital input signal, processing the amplified digital input signal with the digital input signal received on a second path to detect distortion components of the amplified digital input signal, correlating the detected distortion components with the digital input signal received on a third path, to adaptively control a gain of the digital input signal on the second path, amplifying the detected distortion components, and coupling the amplified digital input signal with the amplified distortion components to remove the distortion components included in the amplified digital input signal, as recited in claim 24.

Hence, Posner fails to disclose all of the claimed features as required by Section 102. Withdrawal of this rejection is thus respectfully requested.

Claim 6, 7, 11, 12, and 14 stand rejected under 35 U.S.C. § 103(a) over Posner, in view of Ha (U.S. Patent No. 6,240,144). This rejection is respectfully traversed.

The asserted combination of references fails to establish a prima facie case of obviousness, as required by Section 103. For example, claims 6, 7, 11, 12, and 14 depend from

claim 1. As discussed above, Posner fails to teach or suggest all of the features. Ha, either alone or a combination of Posner, fails to teach all of the claimed features, and specifically fails to teach the features which are neither taught nor suggested by Posner.

For example, Ha teaches an apparatus and method for linearizing characteristics of a power amplifier in the mobile radio communication system by compensating for the non-linear characteristic of active elements included in a transmitting stage of the system. Ha further teaches that the I-channel and Q-channel of the digital signal separately controlled. Accordingly, the Patent Office asserts that would have been obvious to combine the teachings of Posner and Ha to selectively controlled first and second components of the digital input signal.

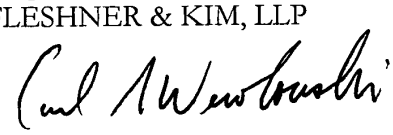
Assuming, without conceding, that the Patent Office's assertion is accurate, Ha still fails to teach or suggest at least a correlating unit coupled to receive the digital input signal on a third path and the detected distortion components and configured to correlate the detected distortion components with the digital input signal to adaptively controlled distortion component detecting unit. Accordingly, the combination of references fails to establish a prima facie case of obviousness. Withdrawal of this rejection is therefore respectfully requested.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **Carl R. Wesolowski**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
FLESHNER & KIM, LLP



Daniel Y.J. Kim
Registration No. 36,186
Carl R. Wesolowski
Registration No. 40,372

P.O. Box 221200
Chantilly, Virginia 20153-1200
703 502-9440 DYK/CRW:cre
Date: November 7, 2003

Please direct all correspondence to Customer Number 34610